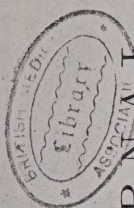


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BARRY, Sir Edward



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SIR EDWARD BARRY, BART., M.D., F.R.S.;
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Among the physicians who practised in Ireland during the eighteenth century few occupied a more prominent position than Edward Barry, yet at the present time very little is known of his life or work. Webb in his "Compendium of Irish Biography" does not mention him, only a few lines are devoted to his memory in the "Dictionary of National Biography," and, as far as we know, no attempt has been made to write his biography or to analyse his work.

Edward Barry was born in Cork in the year 1698, (1) his father, Edward Barry, M.D., being already in practice in that city. To what particular branch of the Barry families in Cork Edward belonged we have not been able to ascertain, but it is suggested that he was a relative of Nathaniel Barry, of Cork, an apothecary, and the fact that one of his brothers and his own eldest son were given that name makes the suggestion very probable. The first thing we learn of young Barry is that he was admitted a scholar of the House in Trinity College, Dublin, in 1716. (2) He must have entered college in 1713, at the age of fifteen, for we find him graduating B.A. in the summer of 1717. A few years before Barry entered college an anatomical department had been started there, and the dissecting room was opened in 1711. At this time lectures were being given in anatomy, in botany, and in chemistry; there was also a professor of medicine, but the number of medical students in the University was small, and we have no information as to whether Barry was one of them or not. It is very probable that he did attend some medical lectures while in College, for we find him on the 28th of April, 1718, "entered on the physic line" (3) at Leyden, where he graduated M.D. the following year. A copy of his Latin graduation thesis, entitled "Dissertatio Medica Inauguralis de Nutritione," is preserved in the Library of the British Museum. While at Leyden Barry studied physic

under the great Boerhaave, to whom he afterwards refers in terms of great respect; but it is hardly possible that he could have derived so much benefit as he maintains he did, unless he had some knowledge, at all events, of anatomy. During part of the time that Barry was in Trinity College, Dr. Bryan Robinson was Professor of Anatomy, and to him Barry refers in one of his books, and he also appears to have been Robinson's physician during his last illness in 1754 (4).

After leaving Leyden Barry appears to have started the practice of his profession in his native city of Cork on Orrery Quay. In or before the year 1725 (1) Barry married his first wife, but we have been unable to ascertain her name or to find any trace of the marriage license in the Irish records. By her he had four sons and one daughter. The eldest of his sons, Nathaniel by name, followed his father's profession. In 1726 Barry published in Dublin his first book—"On a Consumption of the Lungs," and it was re-issued in the following year in London. In this book he tells us he largely incorporated his Leyden graduation thesis. In 1733 he was elected a Fellow of the Royal Society of London, but he does not seem to have contributed anything to the proceedings of that body. About this time Barry contributed two papers—one to the first and one to the third volume of the "Medical Essays and Observations," published by a Society in Edinburgh, and these, together with his work on Consumption, helped no doubt by his influential friends, gained for him admission to the ranks of this illustrious Society.

In "The Orrery Papers," (5) edited by the Countess of Cork and Orrery, and published in 1903, there is quite a long correspondence between John, 5th Earl of Orrery, and Dr. Barry, extending from the year 1745 to the year 1758. This correspondence deals with a variety of subjects, and from it we learn something of the character of Doctor Barry. Lord Orrery enjoyed some reputation as a writer, and his translation of the letters of Pliny the Younger was well spoken of at the time. He is, however, best remembered for the very unfair and disingenuous "Life," which he published of his friend Dean Swift.

Writing from "Corke, March 10th, 1732/3," to Thomas Southerne, Lord Orrery says: "At this melancholy Place your Letter of ye 20th of Feb. reached me: I thank you for such a Cordial, for indeed I stand in need of very strong Restoratives to preserve the Gloom and Horror of this City from enveloping

my Heart. I am at the House of a most eminent Physician, a most agreeable Friend. I could not forbear shewing him your Letter; I am proud of your Friendship, and happy in that paternal Tenderness which in every Word of your Epistle cheers my very Soul. Doctor Barry (for so my Friend is called) at the same time that he is the Esculapius of the Age, seems to hide the Artist under the more acceptable Character of the fine Gentleman. The sweetness of his Temper, the genial Turn of his Conversation, join'd to his universal knowledge of Men and Things, make him at once the Admiration and Delight of All who are happy enough to be his Companions. Oh! my excellent old Man! Two or three such Friends as You and Dr. Barry in the oak Parlour at Marston would almost make me forget my Sorrows and wish to Live." Even though we make full allowance for the "profuseness of complement that largely discounts sincerity," which is evident in Lord Orrery's letters we may fairly consider that the man of whom this letter was written possessed those qualities which make an agreeable companion and a good friend.

In a letter to Lord Orrery, dated "Jany. 22d, 1735/6," Dr. Barry tells him that he is enclosing a letter addressed to a mutual friend, one Will Taylor. His treatment of this Will Taylor to some extent justifies Lord Orrery's appreciation of "his universal knowledge of Men and Things." He says: "While his heart was warm for Miss Southwell, he gave a Commission to his Mercht to send him a Hampier of Burgundy, and another of Champagne. It was charged at the first Price; he told me afterwards I must take half, and gave directions to Mr. Harper to send it to me. He designs, I doubt not, to make me pay for it, which would quite destroy its flavour. This I would willingly prevent, for 'tis the best I have tasted. I have now sent him a letter of Thanks, not in the least suspecting but that he intends it for a Fee. Observe his countenance when he reads it!" Writing in the following April, Barry says: "I'm concerned to hear that Swift is confin'd by some Disorder; I hope nothing but a bilious cholick, which a few Satyrical evacuations will remove." In the next two letters we get a glimpse of the medical treatment of common ailments in the early part of the eighteenth century. Barry writes: "May 18th, 1736. I was mad enough to go to Kinsale last Wednesday and return the same Day. I inflamd my Blood by this unusual exercise and took Cold. By being twice blooded, Watergruel and Confinement, I am now free from any

Complaint of Consequence." Then again: "May 25th, 1736. By three times bleeding and applying Cantharides I am entirely free from a Fever, and have but weak remains of my Cough, but still confine my Self to milk-morning and evening, and a total abstinence from Wine. I visited my patients these two days. Dean Ward will tell yr Lordship that all this was unnecessary, and perhaps he is in the right of it, he would not believe that I had anything of a Colic when I was in most exquisite pain. Yr Conduct, my Ld, has been too much the reverse of mine, you have been too careless, and I am too anxious and busy in the use of medicines. I own I have an aversion to pain, and I know the dangerous Fire of my Constitution can only be appeas'd by a large Sacrifice of Blood. These visits of Sickness are the most usefull Lectures of Philosophy, tho' for my part I would rather continue ignorant; however, I hope they will make us more prudent in our Conduct for the future." In a letter dated "Orrery Quay, Feb. 1st, 1736/37," he says: "While I thought myself invulnerable and had bid Adieu to all pain, I was seized with a confounded toothach, I had the suspected one extracted, but since it has rag'd more violently in the rest. I must wait with patience for ease. . . . I have spent these three or four nights past in chewing Tobacco and reading Rollins History." On the 19th of May, 1738, he writes from Orrery Quay to congratulate Lord Orrery on the approach of his second marriage, and says: "Poor Boerhaave is dying in an asthma, and, as he says himself, from a collection of purulent matter in his Thorax." Towards the close of the year 1739 Barry left Cork to settle in Dublin, and the following letter from Lord Orrery to him on that occasion shows what was then expected of a physician. We often hear very similar advice given at the present day:—

"CALEDON, Nov. 30th, 1739.

"MY DEAR DOCTOR,—I welcome you most heartily to Dublin. You are now in your proper Sphere, where you cannot fail to shine with a Lustre far beyond all the lesser Lights of the Firmament; but you must yet awhile look upon yourself as only rising into Glory; and at the first dawning of your Appearance you must expect to meet with some Clouds and noxious Particles that may obstruct the force of your heat and the brightness of your Rays. The finest Noons begin with the dulllest Mornings. Fogs and Vapours precede Sunshine; on the other hand, if the Mornings

be too early bright, the Noon is overcast, and the Sun sets amidst all the Terrors of Erebus and Nox. Your Morning, my dear Doctor, may possibly be cloudy, but I shall see your Meridian darting forth your Beams and at once giving Warmth and Light to the whole Globe of Ireland. It is very certain the *Genus irritabile Fratrum* are awakened at your Approach. Be arm'd then against the various Monsters, that for want of other poisonous Animals, are particularly plentiful in the City of Dublin. *Gorgones, Harpyneque et Forma tricornis Umbra* consider now as Shadows. Lett them hiss. Lett them crawl; and lett them try to hurt You. Your Power is from Phœbus, and You are invulnerable. They will soon find You so, and they will return disappointed to the Ooze and Filth of the Lifey. I hear You do not intend at your first Appearance to rowl over Essex Bridge in your own Chariot: I am sorry for it, for a Chariot seems not only necessary if you have great Business, but more so if You have less than your Skill entitles you to. Oeconomy may exert itself in a thousand Instances more properly than in this. The Brotherhood will rejoice at it, and the proud, the rich and the vain (a numerous and mighty Generation) will scorn to send for a Physician who has not a Chariot to grace the outside of their Portal. Consider too, whilst You are box'd up in your Chair, You may be crushed and destroy'd and run over by some hasty Member of the Fraternity, as he flies with the Wings of the Wind and the Horses of the Sun to dispel the Gout, the Jaundice and the Devil; and it is too true that Ward, or Mrs. Stevens could be sooner with a Patient if they went in a Coach than Apollo himself could be if carried in a Sedan. No, my dear Doctor, if you turn your Chariot into a Chair, I'll turn my Coach and Six into a Kings-End Carr. Adieu. Orrery."

On his arrival in Dublin, Barry proceeded to take his medical degrees in the University. At that time the examiners for these degrees were the Censors of the College of Physicians, and in the minute book (6) of that College, under the date of 24th November, 1739, we read: "Mr. Edward Barry examined for his Bachelor's Degree and admitted to perform his Acts." On the 8th of March following it is recorded that "Mr. Edward Barry was examined and admitted to perform his Acts for his Doctor's Degree." These degrees were conferred at the Summer Commencements of 1740, and on the 22nd of July of that year Dr. Barry was elected a Fellow of the College (7). On St. Luke's

Day, 1741, he was "chosen Censor and Register." Soon after he came to Dublin, Barry had the misfortune to loose his first wife, she dying "in childbed, 5th May, 1741" (1). At this time Barry was living in College Green, where he continued to reside for more than ten years. In spite of the prognostications of Lord Orrery, Barry seems to have been almost at once a success as a Physician in Dublin. By Patent (9), dated 18th of April, 1745, Barry was appointed Physician-General to the Forces in Ireland, in succession to Upton Peacock, M.D., and on the 9th of October following he took his seat and oath as Member of Parliament for Charleville, Co. Cork (10). In December, 1746, Barry married his second wife, Jane Dopping, (11) daughter of the Bishop of Ossory. Miss Dopping had several distinguished medical relations; her grandmother was a sister of Sir Thomas Molyneux, who was himself married to her mother's sister; her mother was a daughter of Dr. Ralph Howard, who was Regius Professor of Physic in the University, and three times President of the College of Physicians (7). There were no children as the result of this marriage, though Lady Barry outlived her husband by a year. In 1749 Barry was elected President of the College of Physicians, and in 1751 he had started to build his house on the outskirts of Dublin. Writing on May 2nd, 1751, to Lord Orrery (5), he says: "My little Villa begins to ryse above the Ground. I shall be happy there as Pliny was at Laurenti. Then as I have been a slave to the town, I shall think my garden and my park an Elysian field where I can freely breath airs of my own. I shall sleep better, and, of course, complain less of Headach; perhaps too I shall attempt to write." The house here referred to was at first known as "The Hill," later it was called "Barry House" (12), and now is known as "Mespil House." To this day the ceilings exhibit some of the most beautiful workmanship to be seen in Dublin (13a). Barry does not seem to have lived much in this house, for Gilbert (13) tells us that "Victor says (writing from Dublin to Spranger Barry in 1753): 'At present the best part of my agreeable Philosophical hours are spent here in College Green, with my worthy friend Dr. Barry, with whom I sup every Sunday during the year; you may guess you are often our favourite subject—and some late very whimsical accounts of you have afforded us matter for speculation; however, you know, at all events, we are your fast friends.'" When Barry left Dublin, Barry House was set to the Recorder. On the marriage of his

fourth son, Robert, Barry settled this house on him, but from 1777 to 1793 it was the residence of Robert Hellen, Solicitor-General, and afterwards a Justice of the Common Pleas. In 1794, on the death of Bryan Robinson, Barry was elected Regius Professor of Physic, which appointment he held till he left Dublin in 1761. In 1759 Barry's second book was published in London. The copy of this book at present before us was that given by the Author to his friend, Lord Orrery, and contains besides a Latin inscription in Barry's handwriting, dated April 5th, 1759, the following note written by Lord Orrery: "This is the first book of Physic that I ever read. It may very well be the last, because to me it seems to contain all that I or any other man need to know of Medicine, and the nature and state of the human body. The style is excellent and elegant: much learning is properly diffused throughout the whole. Nor can I possibly express the pleasure I have received, in beholding the noble flight, which my Friend who is a *rara avis*, has made, eagle like, into the highest regions of fame. Marlbro' Street, April 10, 1759. C. & O." On November 20th, 1759, Barry was incorporated M.D. at Oxford (14), and he appears to have made up his mind to try practice in London, for we find him granted a License to practice Medicine from the same University on the 30th of June, 1761. On the 30th of September of the same year he was elected a Fellow of the College of Physicians of London, having already on May the 18th been permitted to become an Honorary Fellow of the Dublin College. In that year also he was succeeded in the Professorship of Physic in Dublin by William Clement, M.D. He was chosen Censor of the London College in 1763 (3). At the dissolution of the Irish Parliament on November 25th, 1760, Barry vacated his seat for Charleville, and in the next Parliament was succeeded by his son Robert. In connection with this seat we have a curious note in a codicil to Barry's will, dated September 28th, 1774. He says: "I leave to my son Robert Barry the sum of £300, left to me by his (Mr. Lyons) brother, my dear friend, with the interest thereon, which now amounts in the whole to about £450, and what is justly due to me for my journey and attendance at Marston, where I was sent for, after this will for which and frequent attendance on the present Lord's family I was never paid, but if by his Lordship's recommendation my son Robert is chosen into Parliament I Cancel this debt." His son Robert was elected, whether by "his Lordship's recom-

mendation" or not, for we find it stated in an official and temporary manuscript of the Irish Parliament of 1775 (15) as follows: "Barry, Robert B., of Charleville. Bought in by Lord Shannon. Senehall of the King's Manours £500. Commissioner of Appeals £300 and King's Council. Supports from Situation. Attached to Lord Shannon."

We do not know what success Barry met with in London, but if we are to believe Johnson, it was not as great as he expected.

Boswell (16), describing a dinner at Mr. Thrale's on Wednesday, April 10th, 1776, makes the following remark: "Johnson mentioned Dr. Barry's System of Physic. 'He was a man,' he said, 'who had acquired a high reputation in Dublin, came over to England and brought his reputation with him, but had not great success. His notion was, that pulsation occasions death by attrition; and that, therefore, the way to preserve life is to retard pulsation. But we know that pulsation is strongest in infants, and that we increase in growth while it operates in its regular course; so it cannot be the cause of destruction.' Soon after this he said something very flattering to Mrs. Thrale, which I do not recollect; but it concluded with wishing her a long life. 'Sir,' said I, 'if Dr. Barry's system be true, you have now shortened Mrs. Thrale's life, perhaps some minutes, by accelerating her pulsations.'"

About 1769 or 1770 Barry left London and settled in Bath, where he remained till his death on the 29th of March, 1776. His will, which is dated 1771, October 17th, describes him "as now resident in the City of Bath." By this will he left the property that he had bought from Lord Egmont at Dundee, Co. Cork, to his eldest son, Nathaniel, with various charges for his other sons. His daughter Jane, who was married to Robert Jephson, got the furniture in his house at Bath and also his plate. He bequeathed "To my dear friend Mr. Ponsoby my silver dish and lamp, my fine Japan set of china plates and dishes and £100." This last bequest was made in a codicil, dated October 26th, 1773. The last codicil to the will is dated February 22nd, 1776. He left an annuity to his sister Jane, and also to his servant in recognition for his attention to him during his long and tedious illness. Sir Edward was succeeded in the baronetcy by his son Nathaniel, who was a distinguished physician in Dublin, and whom Cameron (9) tells us "Mr. Grattan characterised as the most accomplished gentleman he had ever met." Nathaniel Barry was

President of the College of Physicians in 1767, and affords the only instance of father and son being both Presidents of the College during the father's lifetime. The portrait which we reproduce is from a photograph of the picture of Barry in the College of Physicians. This picture was given to the College by the late Sir Henry Marsh, Bart., and is attributed to Sir Joshua Reynolds (3).

We append an analysis of Barry's principal Medical work "On Digestion," as it gives one an idea of the character of the medical teaching in Dublin about the middle of the eighteenth century, and it also helps us to form an estimate of the author's worth as a physician. Barry appears to us to have been a fine type of the educated physician of his time, a good scholar, a shrewd man of the world, and though biased in his ideas of Medicine by the opinions of his teachers, yet sufficiently emancipated from them to be able to make good clinical observations and to direct his treatment accordingly.

There is practically nothing in Barry's first work which is not also contained in his second, published some thirty-three years later. In the preface to the work on "Digestions" he says: "It is now more than thirty years since I published a 'Treatise on a Consumption of the Lungs'; in which I attempted to explain their Structure, and the Nature of Nutrition: The Principles, from whence I chiefly derived my Observations, were such as the learned Dr. Boerhaave had laid down: I regarded him then with all the favourable Prejudice, and warm Gratitude of a Pupil; nor has the Experience of many Years altered my Opinion. His Reasoning on the animal Oeconomy, and his general rules of Practice, will be esteemed, while true Philosophy prevails, and Nature is the Guide, which directs the Physician's Conduct." The earlier work is incorporated practically word for word in the later, with the addition of some fresh observations and illustrative cases. Under these circumstances it will suffice if we consider the opinions as they are expressed in the work on "Digestions." In the preface to this work he explains the principle which underlies his treatment of the subject in the following words: "The Rules for preserving Health, chiefly depend on maintaining such an uniform strength in the different Digestions, that the Aliment should be assimilated to the animal Fluids, and the Discharges be equal to the Supplies, and in a just Proportion to each other: Diseases will arise when they deviate from this Standard; and

their Difference will depend on the Importance of the Digestion, or Discharge, and the Degree, in which their principal Organs are affected."

A human body is composed of an almost infinite number of vessels with fluid circulating in them, and consequently from its very nature is subject to constant decay, for "attrition is the unavoidable effect of motion." "These continual abrasions of the solid parts, and the losses which the fluids sustain in respect to their quantity, require a constant repair; which is likewise made more necessary by the quality of the fluids being so altered by repeated circulations, and by being deprived of their finest and most diluting parts, that instead of continuing fit for nourishment, they at length become destructive, and acquire in some degree the nature of a mineral poison—and from this cause, such as perish by hunger, are generally seized with a raving madness before they die." "The necessity of a constant repair of the solids and fluids being thus evident, I shall endeavour to explain the different digestions which the aliments suffer, and the necessary excretions, or discharges which are made from thence, until they are converted into an animal fluid, fit for nourishment." "All fluids are produced from what we eat and drink, and all solids are composed of the materials which these fluids contain." The first digestion consists in the preparation from the food we eat and drink of a laudable chyle which is absorbed from the intestines. "The food taken for nourishment is greatly prepared by mastication, which breaks and reduces it into smaller parts, and mixes it with the mucus of the mouth, and the salival juice, whose great usefulness may be known from its origin (being separated from the purest arterial blood), and the good effects it produces by being swallowed: Whereas such, who imprudently discharge this useful humour, become more liable to indigestion, and a bad habit of body." The importance of good teeth is thus evident, and—as he says—this explains the observation of Hippocrates—"That such as live to a great age have many teeth."

The stomach is one of the most important organs of the first digestion, and it acts on the food in three distinct ways. First by its heat, which "in a healthy man is greater than the common heat of the sun in a summer's day." By means of this heat the food is "attenuated and reduced into a more soft and fluid substance." This heat also causes the air that is swallowed with

the food to expand, and so helps to break up the food particles. The second action of the stomach is the result of the action of the separated or contained juices. The glands of the stomach produce a mucus which defends the walls of the stomach from injury by the contained food, and the fluid is chiefly of use in diluting the food stuffs. When fermentation takes place in the stomach it is, as it were, accidental, and the result of the retention of the remains of a previous meal. Fermentation is not due to anything derived from the stomach itself, and is not a principal agent in digestion; "neither is such fermentation, though often begun ever perfected there; for that operation can never be completely finished unless the fermenting bodies remain undisturbed in the same vessel, until their intestine motion gradually ceases, which is prevented by the muscular fabric of the stomach." The third great factor in gastric digestion is the mechanical action of the muscular wall of the stomach, assisted by that derived from the neighbouring organs. The stomach does not actually grind the food as some have suggested, but it is "comminuted" and determined towards the pylorus. The situation of the stomach between "the largest and most warm bowels of the body," and "behind it is placed the aorta, the largest vessel in the body, whose heat and constant vibrations are very considerable," greatly favours the mechanical action of this organ. The stomach is "not capable of dissolving the solid parts of animal or vegetable bodies, but only of attenuating them and expressing their fluid parts—hence the reason plainly appears, why the stomach is not dissolved by its own action."

In spite of what has been maintained by many authors, repeated and exact experiments have proved that no acid or alkaline humour is separated in the stomach. "Whatever acid is contained in the stomach, proceeds from the remains of former food; and though it frequently contributes to promote digestion, yet it is by no means absolutely necessary to it." "The aliment thus far digested in the stomach, and expelled into the intestines, receives greater changes from their heat, and pressure, the mixture of the bile, pancreatic juice, and the exhaling and secreted fluids from the vessels and glands." "The bile is the most concocted humour in the body. This natural digestive, which possesses greater real virtues than what the Chymists have assigned to imaginary ferments, and precipitants, chiefly contributes by its saponaceous activity, to attenuate the viscosity of the aliment

and to give to its disunited, various parts the first appearance of chyle, and of an uniform fluid." "The nerves which are distributed to the stomach and intestines are much more numerous, and large, than seem to be necessary for their muscular motion." "It is therefore more than probable that the chyle in its passage through the mesentery, is impregnated with a great quantity of animal spirits; and I shall hereafter more particularly endeavour to show that the nerves terminate in several parts of the body, where they perpetually exhale that animating fluid." This is the first digestion, the excretion of the feces is its discharge, and on the principles that he has here laid down Barry elaborates the pathology and treatment of various diseases.

About six hours is necessary for the completion of the first digestion, but the chyle thus formed "is still so crude and indigested, and retains so much of the original nature of the aliment," that it must be profoundly altered before it can nourish the tissues of the body. The chyle is admitted to the blood by the subclavian vein, and must all pass through the lungs, which are the principal organs of the second digestion. In this digestion the chyle is changed into serum, which is "the most perfect animal fluid," and is capable of passing through the smallest vessels of the body. The lungs effect this change of chyle into serum by "the compressing force of their vessels," which, "being particularly increased by the weight of the air, contributes to give a greater attenuation, and a more powerful mixture to the fluids than they receive from all the other vessels of the body." "The difference between blood and serum, arises only from a greater union of the globules of serum, for Leuwenhoeck has observed that one globule of blood, when not sufficiently compressed by the action of the vessels, dissolves, and separates into six globules of serum, and these when again united, form one globule of blood; therefore (*ceteris paribus*) the proportion of serum to blood will be reciprocally, as the compressing force of the vessels." "The complete change of chyle to serum takes about four hours. A more elaborate description of the function of the lungs is given later on in the book, and to it we shall refer to later. The urine is the chief discharge of the second digestion, and the parts of the chyle which remain after the formation of the serum are changed into urine. "All urine consists of water, oil, salts and earth." "As the urine is immediately separated from the blood, it may, if rightly attended to, in a great measure not only determine the

effects of the second digestion, but the alterations which the blood receives from different diseases." On this basis the action of both diseases and remedies is deduced, and various illustrative cases are given. Thus "a total suppression must unavoidably end in death, always preceded by a sickness in the stomach, vomiting, hickup, convulsive motions and lethargy."

Diabetes, or excessive secretion of urine may result from various causes. "Dr. Mead, with his usual judgment and sagacity, early pointed out the liver as the distant and latent seat of this disease," and the bile "is in some constitutions apt to degenerate into a sweetish faint taste." He then enters into a discussion on diet and regimen, and says, "from the similar structure of the stomach and intestines in human bodies, I think it may be reasonably concluded that an aliment of the vegetable kind was originally designed as most proper for them—but the race of mankind soon degenerated, and to their successive, and more feeble offspring, animals became a necessary part of food. However, a great part of mankind still subsist on a vegetable diet, and have more health, and freedom of spirits, than those of the same constitution, who use too freely an animal food." He discusses at some length the question of putrefaction and the action of antiseptics, and says: "There seems, therefore, to be rather a remarkable analogy between the fermentation of vegetables and the putrefaction of animal fluids, as the effect of this intestine motion in each, is to dissolve the union of their parts, and to produce a new combination of such as did not exist before." The use of salt he considers necessary to those who eat much animal food, as an antiseptic agent, and curiously enough, takes quite a wrong view of the matter, insisting that it is more essential to those who eat animal food than to those who live on vegetables.

The third is the most important digestion, and to it the other two are merely subservient. In this digestion the serum is made fit for nutrition. This change is effected by the heat of the body and the motion in the vessels, and these actions are illustrated by the hatching of an egg. The white or albumen of the egg resembles the serum, and by the heat of the hen the albumen passes from the outer part of the egg to the central part, where it is built up into the chic, and so by the heat of the body the serum is changed and built up into the tissues of the body. "When the healthy serum is so far gradually attenuated, by the action of the vessels on it, as to be capable of entering the de-

creasing series of vessels, the third digestion is finished. But as the three digestions are preparatory to nutrition, I shall endeavour from the nature of these solid vessels, and the known laws of motion, to explain in what manner it is performed." This he then proceeds to do, and divides the period of man's life, from the point of view of nutrition, into three stages. The force of the heart distends the vessels of the young, and so creates a demand for new supplies. These supplies are derived from the fluids, and hence the body grows as long as the force of the heart is greater than the resisting force of the vessels. This is the first stage. When the force of the heart is equal to the resisting force of the vessels, we have the second stage, and the body remains in equilibrium. As old age comes on the vessels gradually become more compact, and so get the better of the force of the heart; attrition also has more effect on the hardened vessels, and the body enters on senile decay, which is the third stage. "Old age advances in the same proportion; and (if the expression may be allowed) the man grows back again." "Such a one cannot so properly be said to die, as that he ceases to live." Then follow various mathematical calculations to prove that "the more quick the motion of the blood, the sooner will old age advance." Our object should be to obtain "that *Viridis Senectus*, so much wished for, and so seldom obtained; where reason and philosophy easily subdue any remaining passions, and which closeth at length the last period, like the evening of a Summer's day." He agrees with Hippocrates that this is to be sought for by "a temperate regimen, very moderate exercise, and abstinence from all labours which waste and heat." "Nothing more contributes to promote nutrition than sleep," for then the fluids contain more nourishing parts, and there are fewer abrasions and less attrition. The integrity of the nerve supply is as essential to nutrition as that of the blood supply, for they supply the part with animal spirits. The existence of these animal spirits has been denied, and attempts have been made to explain the action of the nerves in "a more mechanic way," but such explanations he rejects. He looks on the nerves as derived from the last series of vessels in the brain and spinal cord, from these minute arterial branches come the nervous fluid or animal spirits. It is evident "from the structure of the nerves and from their being deprived of their influence, when obstructed by a ligature, or diseases, that the exercise of their functions depends on the motion of a nervous fluid, or

animal spirits through them ; and that they are most unfit for elastic vibrations." "This nervous fluid seems to be formed for more extensive uses than sensation and muscular motion ; and such as could never be answered by solid elastic strings ; for it is more than probable that after it has performed these principal functions, it is absorbed by the lymphatic vessels, and returns into the blood, whose energy, and fluidity is much assisted by it." "These nerves are distributed to every part of the body for animal, and vital functions, as the finest vessels of the arterial system are for nutrition." The nerves are also the principal instruments of the mind, but the union between soul and body, though evident, is "only known to the great Author of Life and Motion." The insensible perspiration is the discharge of the third digestion. Its quantity varies in the opposite direction with the quantity of the urine. In the great cavities of the body there is a perspiration, but there the perspired matter is reabsorbed by the absorbent veins and "by its activity, contributes to animate, and dilute the venous blood, which has been deprived of its finer parts, by previous secretions." It is probable that on the external surface of the body there are similar absorbent veins, which imbibe moisture from the air and from warm baths. Many disorders, both acute and chronic, will arise from a sudden suppression or slow diminution of this discharge. Gout is such a disease, and this he discusses at length.

The last part of the book is devoted to a consideration of the use, structure and diseases of the lungs. He gives a very correct description of external respiration, describing the way the air enters and leaves the thorax much as it is done in modern textbooks. The explanation of the rhythmic contraction of the heart is most ingenious. The nerves pass to the heart through the auricles, and when the auricles are empty the ventricles contract, when the auricles are full the ventricles relax. The explanation of this is that when the auricles are empty the nervous fluid can pass unobstructed to the ventricles and so causes them to contract ; but when the auricles fill, they obstruct the passage of this nervous fluid, and so the ventricles become paralytic and relax ; the auricles having now no obstacle empty their blood into the ventricles and allow the nervous fluid to again pass to the ventricles. The blood undergoes great physical change in the lungs, and "the heat, colour, and most material properties of the blood are chiefly owing to the lungs." "Nothing is more sur-

prising, and perhaps more difficult to explain, than the heat of the blood in animal bodies : for the most violent agitation of any other fluid is not capable of exciting so great a force of heat. The following causes, which can never concur in any other fluids, may perhaps be sufficient to produce it. The particular elasticity, and spring of the solids of animal bodies, the conic form of the arteries, their ramifications, the various motions and repercussions arising from hence, must all produce a more exquisite attrition, than any artificial motion can possibly excite. Secondly, the animal spirits in several parts of the body mixing with the blood, which from their elaborate secretion, the surprising activity, and minuteness of their parts, seem to be somewhat analogous to the Rays of Light, or Particles of Fire. Thirdly, the density of the globules increased by being compressed by the action of the vessels, and their spherical form, containing the greatest quantity of matter in the smallest space, makes them capable of retaining their heat the longer. Fourthly, by being oleaginous they are apt to receive and retain a greater degree of heat than other fluids. Fifthly, this attrition is performed in vessels where no other medium, such as the air (or at least only its more subtle parts) can intervene." "The bright purple colour of the blood is chiefly owing to the lungs, but not by admitting nitrous particles with the air, as Lower and others have imagined ; for it does not appear that the common gross air is received into the blood, or that nitre can be in any way sufficiently volatilised to be universally mixed with the air, and fit for this purpose. As the pressure of the vessels in the lungs is greater on the circulating fluids than in any other part of the body, the globules that were before separated, or imperfectly joined together, are thereby compressed, and most exactly united ; and from thence the colour of the blood returning to the left ventricle, is much more bright and florid than in the right ventricle, before it received the action of the lungs." Later he again returns to this subject, and says : "It seems, therefore, improbable that the common gross air can be admitted into the blood through the lungs (though 'tis beyond doubt, that some of the finer parts enter with the chyle into the lacteals), and the advantage which Borellus assigns to the blood from the intermediate position of the particles of air between the globules of blood, producing an oscillatory, elastic motion may be more justly explained from the particles of fire, which penetrate and enter all bodies, both solid and fluid, which are thereby

Published Works by Edward Barry, M.D.

- I. *Dissertatio Medica Inauguralis de Nutritione*. Leyden. 1719.
- II. *A Treatise on a Consumption of the Lungs. With a previous Account of Nutrition, and of the Structure and Use of the Lungs*. Dublin. 1726. 8vo.
- Ibid.* London. 1727. 8vo. Pp. 276.
- III. *An Ulcer in the Lungs, piercing through the Diaphragm into the Liver*. Edinburgh Medical Essays and Observations. Vol. I. Edinburgh. 1733.
- IV. *An Account of a Malignant Lues Venerea, communicated by Suction, in the City of Cork, 1728*. Edinburgh Medical Essays and Observations. Vol. III. Edinburgh, 1735.
- V. *The Good Success of Opposite Caustics, and of a Strong Alternative Mercurial Medicine*. Edinburgh Medical Essays and Observations. Vol. IV. 1736.
- VI. *A Mania from a Callous Pia Mater*. Edinburgh Medical Essays and Observations. Vol. IV. 1736.
- VII. *An Observation on Bloody Urine Caused by a Worm in the Bladder*. Edinburgh Medical Essays and Observations. Vol. VI. 1740.
- VIII. *A Treatise on the Three Different Digestions and Discharges of the Human Body, and the Diseases of their Principal Organs*. London. 1759. 8vo. Pp. xvi + 434.

Ibid. Second Edition. London. 1763.

- IX. *Observations Historical, Critical, and Medical, on the Wines of the Ancients, and the Analogy between them and Modern Wines*. With general Observations on the Principles and Qualities of Water, and in particular on those of Bath. London. 1775. 4to. Pp. xii + 479. One Plate.

REFERENCES.

- (1) *Complete Baronetage*. By G. E. C. Vol. V. Exeter. 1906.
- (2) *Catalogue of Graduates in the University of Dublin*. By James Henthorn Todd. Dublin. 1809.
- (3) *Roll of the Royal College of Physicians*. By William Munk. Second Edition. London. 1888.
- (4) *Medical and Philosophical Memoirs*. Minute Book. Vol. II. (5) *The Orrery Papers*. Edited by the Countess of Cork and Orrery. London. 1903.
- (6) *Minute Book of the King and Queen's College of Physicians*.
- (7) *Records of the King and Queen's College of Physicians in Ireland*. By T. W. Balcher. Dublin. 1866.

- (8) *Watson's Dublin Almanack*. 1741.
- (9) *History of the Royal College of Surgeons in Ireland*. By C. A. Cameron. Dublin. 1886.
- (10) *Journals of the House of Commons, Ireland*.
- (11) *Prerogative Will and Marriage Licence*. Record Office, Dublin.
- (12) *History of the County Dublin*. By F. Erlington Ball. Part II. Dublin. 1903.
- (13) *History of the City of Dublin*. By J. T. Gilbert. Dublin. 1839.
- (13a) *Georgian Society*. Vol. I. 1909.
- (14) *Alumni Oxonienses*. Foster. Oxford. 1888.
- (15) *The Irish Parliament, 1775, from an Official and Contemporary Document*. Edited by W. Hunt. 1907.
- (16) *Boswell's Life of Johnson*.
- (17) *Annual Register, Gentlemen's Magazine and Walker's Hibernian Magazine—all for 1776*. Playfair. British Family Antiquity. London. 1811. Dictionary of National Biography. New Edition. 1908. Dublin University Calendar.

NATIONAL UNIVERSITY OF IRELAND.

THE Senate met on Thursday and Friday, November 11 and 12, His Grace the Most Rev. W. J. Walsh, D.D., Archbishop of Dublin, Chancellor of the University, presiding. Sir Christopher Nixon, Bart., M.D., LL.D., was elected the Vice-Chancellor of the University. Sir Christopher Nixon was also elected as the Representative of the University on the General Medical Council. The following resolutions were passed after consideration of a report from the General Board of Studies:—"Resolved: That for the year 1910 the first University examination shall not be obligatory on students in medicine." "Resolved: That all the courses for the Degrees of the Royal University, including those for Matriculation, be adopted for the examinations of the year 1910, in the form in which they would have been for 1910 if the Royal University had continued to exist, but that the practical examination, Mathematics, Honours, Second University Examination in Arts be discontinued." (N.B.—The courses for Scholarships and Entrance Exhibitions, Studentships, Junior Fellowships, Medical Studentships, Travelling Medical Scholarship, and Browne Gold Medal and Prize do not come within the scope of this resolution.) "Resolved: That up to December 15, 1910, the practice which obtained in the Royal University of Ireland of admitting to Matriculation without further examination candidates who had passed the Senior Grade Intermediate Examination in the subjects of the Matriculation Examination be continued."

